

Listing of Claims:

1. (Original) A microelectrode comprising an upper surface, two walls, and a polymer core, each of the two walls forming an angle with a lower surface, wherein the upper surface and each of the two walls comprise a metal thin film in contact with the polymer core, and the lower surface lacks a continuous metal thin film.
2. (Original) The microelectrode of Claim 1, wherein the polymer core comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.
3. (Original) The microelectrode of Claim 1, wherein the lower surface comprises silicon dioxide.
4. (Original) The microelectrode of Claim 1, wherein the lower surface comprises a polymer.
5. (Original) The microelectrode of Claim 4, wherein the lower surface comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.
6. (Original) The microelectrode of Claim 1, wherein the polymer core and the lower surface comprise the same polymer.
7. (Original) The microelectrode of Claim 1, wherein the upper surface and the lower surface are substantially parallel.
8. (Original) The microelectrode of Claim 1, wherein the angle between the two walls and the lower surface is about 90 degrees.
9. (Original) The microelectrode of Claim 1, wherein the metal thin film is selected from the group consisting of gold, platinum, titanium, and any combination thereof.
10. (Original) The microelectrode of Claim 1, wherein the metal thin film has a thickness of about 100 nm to about 5 μm .
11. (Original) The microelectrode of Claim 1, wherein the width of the upper surface is about 2 μm to about 500 μm and the height of the two walls is about 200 nm to about 10 μm .
12. (Original) The microelectrode of Claim 11, wherein the length of the microelectrode is about 2 μm to about 200 mm.

13. (Original) A microelectrode array, comprising the microelectrode of Claim 1.
14. (Original) The microelectrode array of Claim 13, wherein the microelectrodes are interdigitated.
15. (Original) A microelectrode comprising a metal thin film, the metal thin film having a thickness and a plane bisecting the thickness, the plane forming an angle with a lower surface, wherein: the metal thin film is in contact with a supporting polymer, the supporting polymer having an upper surface; the lower surface lacks a continuous metal thin film; and the upper surface lacks a continuous metal thin film.
16. (Original) The microelectrode of Claim 15, wherein the supporting polymer comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel or any combination thereof.
17. (Original) The microelectrode of Claim 15, wherein the lower surface comprises silicon dioxide.
18. (Original) The microelectrode of Claim 15, wherein the lower surface comprises a polymer.
19. (Original) The microelectrode of Claim 18, wherein the lower surface comprises a linear polymer, a crosslinked polymer, an organically modified sol-gel, or any combination thereof.
20. (Original) The microelectrode of Claim 15, wherein the supporting polymer and the lower surface comprise the same polymer.
21. (Original) The microelectrode of 15, wherein the angle between the plane bisecting the thickness and the lower surface is about 90 degrees.
22. (Original) The microelectrode of Claim 15, wherein the metal thin film is selected from the group consisting of gold, platinum, titanium, and any combination thereof.
23. (Original) The microelectrode of Claim 15, wherein the metal thin film has a thickness of about 100 nm to about 5 μm .
24. (Original) The microelectrode of Claim 15, wherein the width of the metal thin film is about 200 nm to about 10 μm .
25. (Original) The microelectrode of Claim 15, wherein the length of the microelectrode is about 2 μm to about 200 mm.

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26. (Original) A microelectrode array, comprising the microelectrode of Claim 15.

27. (Original) The microelectrode array of Claim 26, wherein the microelectrodes are interdigitated.